source and with sufficient pre-baiting of the site and a period during which the trap is left open so they can enter and exit freely, up to five individuals were caught at one time. Vultures, however, pose a great interference problem when attempting to capture caracaras at large baits. Adult caracaras are extremely wary and will not approach any trap, despite camouflage or abundant bait. Typically used noose traps are completely avoided. Experimentation with a taxidermic mount of an adult caracara indicated that these birds are very territorial and do not tolerate intruders near the nest. Subsequently, successful capture of adults was accomplished only in the nesting territory, using a large bow-type net (Q-net) and a tethered live caracara. Success rate with this method was 44% and improved over time as we refined our technique. All juvenile caracaras were marked while still in the nest, between 7 and 8 wk of age, because after fledgling, they quickly seem to learn from their parents to avoid traps.

MOLT IN TAWNY OWLS IN RELATION TO BREEDING PERFORMANCE AND FIELD VOLE ABUNDANCE

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The number of flight feathers molted annually in tawny owls (*Strix aluco*) was investigated by dyeing feathers of captured owls and reexamining the same birds in the following year. Owls were caught during the nestling period before molt started. There was considerable annual variation in the number of primary and secondary feathers molted related to breeding success, which in turn was related to a 3-yr cycle of abundance of field voles (*Microtus agrestis*), the owls' main food. Owls molted most wing feathers in years of low vole abundance when most pairs did not breed, and fewest in years with high vole numbers when most pairs bred. Tail feather molt was not related to breeding success or to any other factor investigated, with most birds replacing all tail feathers biennially. Reasons for the evolution of this complex molt are discussed. An almost identical molt sequence occurs in the larger Ural owl (*Strix uralensis*) in Finland, and it would be valuable to undertake similar studies on wild barred (*Strix varia*) and spotted owls (*Strix occidentalis*) in North America.

RELATIONSHIP OF WATER LEVEL TO BALD EAGLE REPRODUCTION AT SHASTA RESERVOIR, CALIFORNIA

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Stable bald eagle (*Haliaeetus leucocephalus*) populations produce 0.7–1.2 young per occupied site and the Pacific Bald Eagle Recovery Plan states that the goal for reproductive rates for recovery is one eagle chick for each occupied nest site or 50% of the maximum reproductive potential for eagles. Data on the number of occupied bald eagle nests and the number of young produced from these nests has been collected at Shasta Reservoir since 1977. Relationships between water levels at Shasta Reservoir and the number of young eagles produced at each site were determined through regression analyses; these relationships are based on the measured water levels at the reservoirs (USGS, 1979 through 1991), and data on bald eagle reproduction. At Shasta Reservoir, analyses indicated a general increase in eagle reproduction as water level increased. A variety of factors probably contribute to reduced reproductive success in bald eagles. Many of these factors may depend either directly or indirectly on lake water level. Water level affects such factors as surface area of the lake, fish availability, and competition for eagle nesting and foraging areas. About 50% of the variability in bald eagle reproductive success was accounted for by a linear correlation with the average (April through September) Shasta Lake water elevation. This percentage of explainable variability suggests a strong relationship between lake water level and eagle reproductive success. The model created predicts that average lake elevations over 311 meters meet the USFWS recovery goal of one bald eagle chick per occupied nest and average levels below 308 m predicts eagle reproduction below the recovery goal.

ENVIRONMENTAL COMPONENTS OF DIFFERENCES IN OSPREY GROWTH

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There is significant geographic variation in growth rate and asymptotic size between osprey (*Pandion haliaetus*) nesting in arid Sonora, Mexico and temperate Nova Scotia, Canada. This poster presents gradients in environmental variables including, at least, (a) migratory versus sedentary habits, (b) synchronous versus asynchronous breeding, (c) time-limited breeding seasons, and (d) climatic factors as important possible causes to account for the growth and size differences observed between the two populations.

MIGRATION ROUTES AND WINTER RANGES OF GOLDEN EAGLES

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Effective conservation of avian breeding populations can involve a very large area (breeding grounds, wintering grounds, and migration routes). Golden eagles (*Aquila chrysaetos*) that nest in Alaska are difficult to follow on